

chain nodes :

15 16 17 18 19 20 21 22 23

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14

chain bonds :

6-15 9-21 15-16 16-17 17-18 17-22 18-19 19-20 19-23 20-21

ring bonds :

1-2 1-6 1-7 2-3 3-4 4-5 4-7 5-6 8-9 8-13 8-14 9-10 10-11 11-12 11-14 12-13

exact/norm bonds :

16-17 17-22 19-20 19-23

exact bonds :

1-2 1-6 1-7 2-3 3-4 4-5 4-7 5-6 6-15 8-9 8-13 8-14 9-10 9-21 10-11 11-12  
11-14 12-13 15-16 17-18 18-19 20-21

isolated ring systems :

containing 1 : 8 :

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom  
12:Atom 13:Atom 14:Atom 15:CLASS 16:CLASS 17:CLASS 18:CLASS 19:CLASS 20:CLASS  
21:CLASS 22:CLASS 23:CLASS

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=> d his; d tot ibib abs itstr

(FILE 'REGISTRY' ENTERED AT 15:44:02 ON 21 MAR 2005)

DEL HIS  
L1 STRUCTURE UPLOADED  
L2 2 S L1  
L3 25 S L1 FUL

FILE 'CAPLUS' ENTERED AT 15:44:53 ON 21 MAR 2005

L4 7 S L3  
L5 3 S L3/P  
L6 3710 S ?NORBORNANE/IA  
L7 209485 S ?ANHYDRIDE/IA  
L8 272 S L7 AND L6  
L9 3 S L4 AND L6

FILE 'REGISTRY' ENTERED AT 15:47:51 ON 21 MAR 2005

L10 SCREEN 1006  
L11 STRUCTURE UPLOADED  
L12 QUE L11 AND L10  
L13 10 S L12 FUL

FILE 'CAPLUS' ENTERED AT 15:48:23 ON 21 MAR 2005

L14 2 S L13

L14 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:875973 CAPLUS

DOCUMENT NUMBER: 141:350821

TITLE: Preparation of linear dicarboxylate diesters of  
2-(hydroxymethyl)norbornane as plasticizers or  
lubricants for thermoplastics

INVENTOR(S): Lappe, Peter; Springer, Helmut

PATENT ASSIGNEE(S): Celanese Chemicals Europe GmbH, Germany

SOURCE: Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1468982	A1	20041020	EP 2004-8181	20040403
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
DE 10317204	A1	20041118	DE 2003-10317204	20030415
US 2004210081	A1	20041021	US 2004-804727	20040319
JP 2004315527	A2	20041111	JP 2004-117440	20040413
PRIORITY APPLN. INFO.:			DE 2003-10317204	A 20030415

OTHER SOURCE(S): MARPAT 141:350821

AB Linear dicarboxylic acid diesters of 2-(hydroxymethyl)norbornane [e.g.,  
the malonic acid diester of 2-(hydroxymethyl)norbornane] are prepared by  
esterification of 2-(hydroxymethyl)norbornane with either the dicarboxylic  
acid (e.g., malonic acid) or its cyclic anhydride, and are claimed for use  
as plasticizers or lubricants for thermoplastics (no data).

IT Esters, preparation

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP  
(Preparation); USES (Uses)

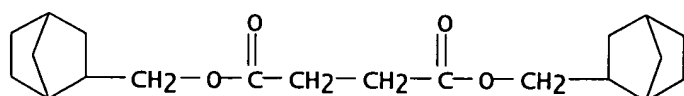
(diesters, linear dicarboxylate diesters of 2-(hydroxymethyl)norbornane;  
preparation of linear dicarboxylate diesters of 2-(hydroxymethyl)norbornane  
as plasticizers or lubricants for thermoplastics)

IT Distillation

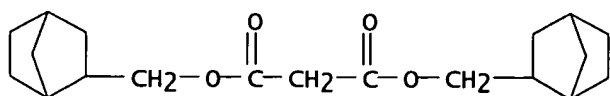
(fractional; in preparation of linear dicarboxylate diesters of

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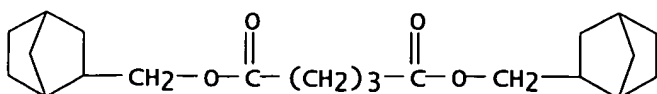
- 2-(hydroxymethyl)norbornane)
- IT Esterification  
(in the preparation of linear dicarboxylate diesters of 2-(hydroxymethyl)norbornane)
- IT Lubricants  
Plasticizers  
(preparation of linear dicarboxylate diesters of 2-(hydroxymethyl)norbornane as plasticizers or lubricants for thermoplastics)
- IT Distillation  
(steam; in preparation of linear dicarboxylate diesters of 2-(hydroxymethyl)norbornane)
- IT Plastics, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(thermoplastics; preparation of linear dicarboxylate diesters of 2-(hydroxymethyl)norbornane as plasticizers or lubricants for thermoplastics)
- IT 5240-72-2, 2-(Hydroxymethyl)norbornane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in the preparation of linear dicarboxylate diesters of 2-(hydroxymethyl)norbornane as plasticizers or lubricants for thermoplastics)
- IT 7732-18-5P, Water, preparation  
RL: BYP (Byproduct); REM (Removal or disposal); PREP (Preparation); PROC (Process)  
(preparation of linear dicarboxylate diesters of 2-(hydroxymethyl)norbornane as plasticizers or lubricants for thermoplastics)
- IT 733051-56-4P 733051-60-0P 776318-72-0P  
776318-73-1P 776318-74-2P 776318-75-3P  
776318-76-4P 776318-77-5P 776318-78-6P  
776318-79-7P  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
(preparation of linear dicarboxylate diesters of 2-(hydroxymethyl)norbornane as plasticizers or lubricants for thermoplastics)
- RN 733051-56-4



RN 733051-60-0

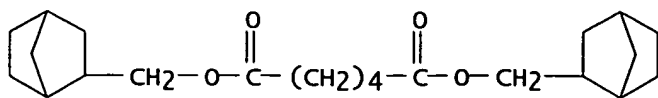


RN 776318-72-0

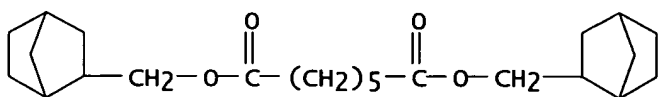


RN 776318-73-1

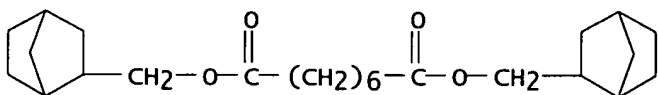
10/804,727



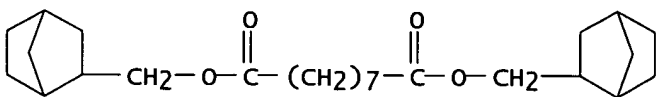
RN 776318-74-2



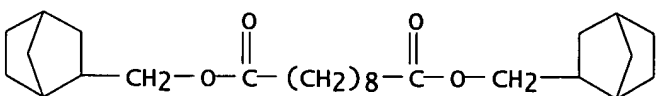
RN 776318-75-3



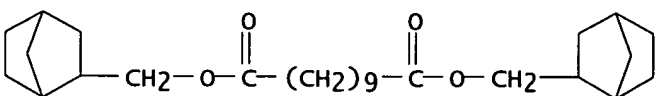
RN 776318-76-4



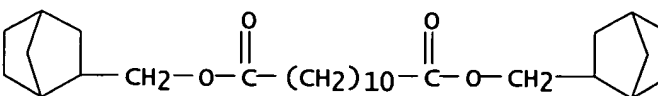
RN 776318-77-5



RN 776318-78-6



RN 776318-79-7



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TITLE: Traction fluid with di-acid ester bridged dimer  
INVENTOR(S): Chapaton, Thomas J.; Capehart, Tenneille Weston;  
Linden, James L.; Mance, Andrew Mark  
PATENT ASSIGNEE(S): General Motors Corp., USA  
SOURCE: U.S. Pat. Appl. Publ., 15 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	US 2004152607	A1	20040805	US 2003-359027	20030205
	US 6797680	B2	20040928		
	DE 102004005287	A1	20040902	DE 2004-102004005287	20040203
	JP 2004269857	A2	20040930	JP 2004-28947	20040205
PRIORITY APPLN. INFO.:				US 2003-359027	A 20030205
AB	The present invention includes a traction fluid that includes a di-acid ester bridged dimer. Methods of using di-acid ester bridged dimers in traction fluids are also disclosed. The inventive fluids are cycloalkyl or halosubstituted terminating dicarboxylic acid diesters.				
IT	Cycloalkanols RL: PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (aliphatic, esters with dicarboxylic acids; traction fluid with di-acid ester bridged dimer)				
IT	Cycloalkanols RL: RCT (Reactant); RACT (Reactant or reagent) (aliphatic; traction fluid with di-acid ester bridged dimer)				
IT	Esters, uses RL: PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (diesters, bicyclic and polycyclic alkyl or haloalkyl- terminated C1-C8 alkyl or haloalkyl dicarboxylic diesters; traction fluid with di-acid ester bridged dimer)				
IT	Esters, uses RL: PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (diesters, diesters terminating in norbornane, bicyclo[2.2.2]octane, and Me or Et derivs.; traction fluid with di-acid ester bridged dimer)				
IT	Lubricating oils (synthetic; traction fluid with di-acid ester bridged dimer)				
IT	Friction (traction coeffs.; traction fluid with di-acid ester bridged dimer)				
IT	Esterification Freezing point Viscosity (traction fluid with di-acid ester bridged dimer)				
IT	Hydraulic fluids (transmission, automatic; traction fluid with di-acid ester bridged dimer)				
IT	38970-72-8, 2,4-Dicyclohexyl-2-methylpentane RL: PRP (Properties) (DCMP; traction fluid with di-acid ester bridged dimer)				
IT	733051-51-9 RL: PRP (Properties) (FLUID X; traction fluid with di-acid ester bridged dimer)				
IT	6192-52-5, p-Toluenesulfonic acid monohydrate RL: CAT (Catalyst use); USES (Uses) (traction fluid with di-acid ester bridged dimer)				
IT	959-69-3P 965-40-2P, Dicyclohexyl succinate 1152-57-4P, Dicyclohexyl				

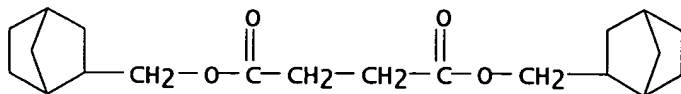
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malonate 115839-13-9P 475203-50-0P 733051-52-0P 733051-53-1P

733051-54-2P 733051-55-3P **733051-56-4P**

RL: PRP (Properties); PUR (Purification or recovery); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(traction fluid with di-acid ester bridged dimer)

RN 733051-56-4



IT 733051-57-5P 733051-58-6P 733051-59-7P **733051-60-0P**

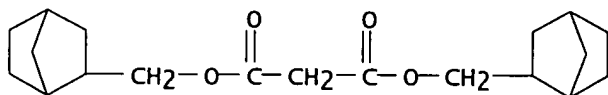
733051-61-1P 733051-62-2P 733051-63-3P 733051-64-4P 733051-65-5P

733051-66-6P

RL: PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)

(traction fluid with di-acid ester bridged dimer)

RN 733051-60-0



IT 96-41-3, Cyclopentanol 108-93-0, Cyclohexanol, reactions 110-15-6, Succinic acid, reactions 141-82-2, Malonic acid, reactions 497-37-0, exo-Norborneol 510-20-3, Diethylmalonic acid 595-46-0, Dimethylmalonic acid 5240-72-2, 2-Norbornanemethanol 6968-75-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(traction fluid with di-acid ester bridged dimer)

IT 733051-67-7 733051-68-8 733051-69-9 733051-70-2 733051-71-3

733051-72-4 733051-73-5 733051-74-6

RL: TEM (Technical or engineered material use); USES (Uses)

(traction fluid with di-acid ester bridged dimer)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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